Notebook, N-06-02-19

Feby 19 1906 TAE

New series of experiments with tubes, provided with rings — 1st Cobalt flake — made by Copper Cobalt Electrolytic plating + dissolving out the Copper by KCy = result of long and exhaustive experiments. This Cobalt flake is approximately one/Ten thousandths of inch thick as calculated from the amperes — its very perfect as compared with the flake we have previously used

The sheets were cut in strips 40/1000 wide + copper dissolved out by cyanide after testing a general sample of strips to see that all Copper was removed. The strips were put into a crock in water having a little KCy left over from washing out the dissolving Cyanide, This keeps the flake from oxidizing — The revolving prongs in the Crock agitated the mass & separated the layers very well — The mass was then washed by 4 changes of water & then put in Ethyl alcohol to remove the water & [illegible] did not drain off — The fluff (curled strips) were then air dried & afterwards run in Hydrogen to clean & consolidate its surface —

John Ott not having finished the little machine for chopping the strips up into flake of the proper size, I had to chop by using shears from time to time screening out that which was of proper size.

Used a 15 mesh screen. The flake is not nearly so crinkled up as old flake & ~~with~~ scarcely any fines. — On account of the strips being previously cut to size, a large part that went through the 15 mesh is twice as long as wide, this is probably an advantage. Considerable portion has a curl in each piece but not many have edge turned over. There are practically no holes in the flake & it is strong & good — as well as tough.

A preliminary trial 21000 green 9000 Cobalt flake 0001 showed flake all right for work — also showed that it was tough but the 4500 glucose which it made the green sticky got dry so quick that it clogged up so hand that nothing could be done with it, Couldn't even roll it out

This drying action I think is due to the great porosity of the green nickel. sounds like a clay pipe - I am now soaking 21000 in water then I will pour off water - dry it out and a weak [illegible] drying [illegible] I try 4500 glucose again — I think I'll let it soak (One hour on 405 PM - off 550 - Drying on glass plate
Another batch I will soak

2 hours - try - using no flake until I get the mix of green & glucose soak — on 415 PM -

1st Batch weighs after drying 21620 - having gained 620 mlg as I left a little probably gained 650 To 675 mlg — or say 3 percent, -

2nd Batch off at 810 pm —
I find that wetting the mix & drying the green in air does the business

4500 glucose previously used with
undamped green got sticky a little
but it balled so bad when I take out in
that couldn't do a thing with it—
The balls got hard from the rapid
absorption of the water of the glucose
into the green— but with the same
amount of green which has
absorbed 3% of water. The 4500
glucose was more sticky & didn't
ball up & worked OK—
Hereafter we soak screened green
all night & the day before
using so glucose or binder will
always work the same—

The second batch of soaked green which
dried longer on the glass plate, dried so long
that when we weighed it it had lost all
the water that it had soaked up, we
thought perhaps we had lost some green
but when I tried the green 21000 with
4500 glucose balled up & we couldn't
mix it. also notice that the green
was very much more brittle than
it was when not soaked & dried.

We shall have to either dry it just enough (i.e. in closed place) that will be saturated or we must spray ~~the~~ water on just before using green on putting on binder.

I find that by taking green 10,000 grams mixing 3½ cc of ½ glucose ½ water it wets green ok by working with fingers then dries in two minutes on Corning glass or hot plate. Then when use it with glucose Req in proportion of 21000 4500 it will not bind up but is ok — probably 4 cc of the ½ + ½ would be better.

It air dries but when you put the ~~Hyde~~ viscous Req amount of glucose it got no sticky properties must be dried on heater till glucose dry.

Tried 21000 green 6 cc of ½ + ½ H_2O + Glue it moistened it but not very wet put it to dry on Corning glass on heater.

Note on [illegible] = we made a [illegible] tube with [illegible] - 50 Cobalt flake [illegible] 31 [illegible] 5" [illegible] —

Cut the tube open in the middle & found [illegible] green [illegible] There is a good network, but the net work is composed [illegible] from 3 to 7 flakes parallel, showing that green has 20 all fines in, That there was more flake than necessary, or the reason probably because each green lump [illegible] several particles, yet there did not seem to be much this way - The bulk of the flake is [illegible] notwithstanding its thickness, probably because [illegible] separated. Now well as this [illegible] Herbert 842 flake [illegible] tube being 743 — [illegible] glucose also [illegible] — [illegible] green was put [illegible] 40 mesh that 743 was [illegible] flake thru 20 mesh,

It looks as if less flake + particles of green better distributed + prevented from forming agregates by the glucose -

350 —

21000 green [illegible] in soaked in Water 1 hour and 45 minutes & then air dried on glass plate, Weight 21650 having absorbed 3% Water — 9000 Cobalt flake [illegible] Kly process, Reduced in Hydrogen Cut by [illegible] screened thru 15 mesh — The flake is cut originally 40/1000 wide, by cutting with shears & screening a large proportion is twice the width it going through the screen End on = These long flake may be an advantage but its probable that flake thru 15 mesh can't be used in Regular loading machine as the slivers makes it feed badly into the tube, however we will use it on this group = Tube Cobalt plated 1/4 of 1000 on a side [illegible] — strip welded in hydrogen before bent in tube shape —

Rings put on Tube before loading —

X. See Note The green was not covered by the flake it was merely mixed with it as it wouldn't cover at all the flake being too stiff & coarse to

	WEIGHT	CAL	TAMPS
352	5.775	271	52
351	5.660	271	51
350	5.805	273	52

	1	2	3	4	5	6
350	522	726	763	807	807	812
351	545	735	757	802	800	803
352	553	736	760	805	800	806

Hot Endurance

		57	58	59	60	61		112	113	114
350	AFTER	840	833	830	825	540	AFTER	842	840	828
51	50	830	820	817	807	820	100	840	827	818
52	HOT	841	827	821	815	832	HOT	843	835	826

	115	116		167	168	169	170	171		222
350	835	841	AFTER	835	831	832	835	827	AFTER	852
51	822	825	150	835	823	815	820	816	200	845
52	832	837	HOT	850	837	831	831	825	HOT	846

	223	224	225	226		227	228
350	837	850	836	827	AFTER	822	820
51	822	823	825	815	250	815	803
52	830	830	823	822	HOT	825	822

permit coarsening - it was however
very well mixed and the [illegible]
the green covered all over with the
glistening surface of [illegible]
would not segregate it being too
sticky - 50 Double Tamps 3 lbs 5" drop
Ends put in tube, Ends rounded in new
machine, soak 48 hours change water
Every 10 hours or so, use 200 cc of
water per tube in which 1 cc of 21% KOH,
after soaking assemble in little cell
with regular charge [illegible]
+ put in 21% KOH + let it stand
24 hours before going on charge.
pour this out + put in fresh 21% KOH
Make 6 Runs [illegible] regular rate
then put on hot endurance, change
KOH before putting on hot test

Weight active material - 5.805
Tamps - 52
Calliper - 273

It don't fill well - [illegible] mouth of tube
Burrs inside -
Run with Reg old runs
Run cold 5 runs then put on hot endurance
Change KOH just before going on Each
run of 50 Hot -

351 Duplicate of 350

Weight active material 5.660
Tamps 51
Calliper 271

352 Duplicate of 350

Weight active material 5.775
Tamps 52
Calliper 271 -

Note on 353, This mix also brings over the that peculiar kind of a mix that remains damp + lodges in a pile - not dry - probably on account of the [illegible] in the green acting to make glucose less sticky + also the long[illegible] of the flake - a less porous green would probably make green proper kind of dry sticky - However it's not certain that the [illegible] may not work in loading machine as plunger each time would force right quantity in if it don't pack on the sides —

353 not sticky mix

Memo notice Weight active material for Group 353 + 356 - probable reason is that mix of 356 was more sticky + lubricated although 356 was more sticky + dry than 353 = There is something strange about it Can it be effect of the absorbed water, this was practically the same

Weight Active Mat, 6.325

353 = Fresh green - the friable kind,
21000 - 6 hours under bell jar with sponge absorbed H_2O till it weighed 22000
(10) 4.5% water — 4500 glucose,
9000 New .0001 Cobalt flake, thru 20 mesh
Noticed glucose mixed OK with green easy - no balls but not very sticky. ~~Do~~ Don't cover but only mixes — granules of green not apparently aggregated but well distributed. It will be impossible to cover green with flake which is tough like this + don't break up. Can only mix it + glucose need to prevent segregation which perhaps will [illegible] necessary. Possibly 4000 glucose would work — This allowing green to absorb water is an OK procedure. Can have chamber with calculated volumes + green sized + in proper sized batches ready to take out + be mixed as wanted, I don't notice thru 20 is any better than thru 15 for flake but probably helps the [illegible] load as it's not so long —

Weight Active Material — 50 ~~Double~~ T — Rings
Temp 48
Cal — 273
around — soaked weeks 1/2% [illegible] 21% KOH lukewarm
Cobalt plated Tubes 1/4 [illegible] Run with Regular old [illegible]
Burs made

CELL	WEIGHT	CAL	TAMPS
355	6,277	271	49
354	6.473	272	51.
353	6.325	273	48

	1	2	3	4	5	6
353	633	825	865	902	900	908
354	600	815	873	913	905	911
355	627	813	845	875	878	880

Hot Endurance

		57	58	59	60	61		112	113	114	115
353	AFTER	942	926	930	900	927	AFTER	950	940	930	932
54	50	943	935	937	817	945	100	972	958	950	955
55	HOT	918	905	907	887	910	HOT	932	930	922	926

	116		167	168	169	170	171		222	223	224
353	943	AFTER	952	942	935	941	930	AFTER	955	937	940
54	965	150	970	963	957	965	955	200	950	947	945
55	935	HOT	932	920	913	930	912	HOT	937	917	913

	225	226		277	278	279	280	281			
353	936	932	AFTER	945	927						
54	946	942	250	937	922						
55	917	915	HOT	930	910						

354 Dup of 353

Weight gm — 6.473
Tamps Double 51
Calliper 272

355 Dup of 353—

Waltham	6,277
James Bruce	#49
Calliper	1,271

Note - nickel loss amount

358	5.824	271	47
357	5.786	271	47
356	5.944	272	48

	1	2	3	4	5	6
356	672	870	887	910	902	912
357	617	816	840	870	858	860
358	642	837	850	888	882	885

Hot Endurance

		57	58	59	60	61		112	113	114	115
356	AFTER	918	907	908	890	912	AFTER	888	885	875	875
57	50	892	875	877	850	880	100	877	870	S.C.	S.C.
58	HOT	912	891	892	870	892	HOT	895	896	883	885

	116		167	168	169	170	171		222	223	224
356	886	AFTER	833	866	862	882	870	AFTER	880	900	896
57	875	150	891	877	867	872	867	200	895	870	875
58	892	HOT	890	877	862	871	862	HOT	882	862	857

	225	226		277	278
356	892	895	AFTER	925	897
57	866	868	250	886	867
58	855	857	HOT	860	850

356 = 21000 green absorbed H_2O to 21950,
Thru 20 all fines in [illegible] $Ni(OH)_2$ —
9000 Co Salt .0001 new Caskey process Thru 20
Same as 350 — The mix seems very sticky - it is
good & well distributed I think it will bridge bad
in loading — Used Nickel plated tubes 1/4/1000
thick on side — ring on tube before packing —
Double Tamps — from the way this mix worked
think 4000 glucose will do — Used 4500
glucose same as 350 — Burrs inside,
Nickel plating by Caskey - good — 3 lb weight
5" Drop in loading — To 62 mm with
regular old irons

Weight active material 5.944
Tamps Double 48
Calliper 272 worked like 350 → to 62
tested like 350 group

357 Dup of 356

Weightraction III	5,786
Double T	47
Cal	271

358 Dup of 356

Wt active material 5,824
Double T- 47
Cal 272

361	5.831	272	50
360	5.555	271	50
359	5,394	272	50

	1	2	3	4	5	6				
359	665	812	807	843	840	250				
360	707	865	857	886	890	900				
361	646	880	885	921	918	923				

Hot Endurance

		57	58	59	60	61		112	113	114
359	AFTER	862	845	842	830	550	AFTER	841	841	842
60	50	896	877	882	871	890	100	887	890	877
61	HOT	928	910	911	893	917	HOT	917	907	900

	115	116		167	168	169	170	171		222
359	837	840	AFTER	833	822	820	822	815	AFTER	840
60	881	887	150	890	882	882	882	877	200	890
61	900	902	HOT	922	913	906	906	895	HOT	920

	223	224	225	226		277	278	279	280	281
359	820	815	810	812	AFTER	810	800			
60	867	862	858	860	250	860	846			
61	900	900	895	895	HOT	905	891			

359 = 21000 green thro 30 all [illegible] –
Absorbed H_2O & weighed 21743 –
9000 flake Co same as 35[illegible] –
4500 [illegible] "
Burris [illegible] – rings on before loading –
Nickel plated tubes same as 356 –
3 lb. drop 5" To be run, soaked & tested like 350

Weight active material 5.394
Double T 50
Cal 272

Mix about same as green thro 20,
sticky –

Loaded in new plaquing by [illegible]

Notice [illegible] loaded in new machine are lower than 361 loaded in old machine – there was something wrong with it –

360 Dup 359

Weight	5,555
Tamps	50
Cal	271

360 loaded in new plug mine by Crosby

361 Dup 359

Wt 5.831
T 50
Cal 272

361 - loaded in old pkg machine

364
363
362

362 = Duplicate of 359 in everything
Except 21000 green thru 40 fines all in
21000 absorbed water + weighed.

Wt
Double T
Cal

Not made

363 Dup 362

Cot
Double T
Cal

not made

364 Dup 362

Wst
"Double T"
Cal

not made

Note 350 group is only one having
flake thro 15 mesh
other groups to have thro 20 mesh

367	5,880	271	50
366	5,925	271	49
365	6,085	272	54

	1	2	3	4	5	6
365	677	900	910	953	950	950
366	650	871	893	931	930	931
367	767	921	915	947	942	943

Hot Endurance

		57	58	59	60	61		112	113	114
365	AFTER	950	935	940	917	945	AFTER	948	937	932
66	50	938	917	921	897	925	100	925	907	905
67	HOT	910	895	900	895	917	HOT	900	897	877

	115	116		167	168	169	170	171		222
365	935	940	AFTER	902	905	900	900	890	AFTER	892
66	907	915	150	882	880	868	886	865	200	872
67	892	900	HOT	857	861	855	866	850	HOT	847

365 21000 thru 40 all fine
21000 mesh weight to 21690-
Cobalt plated tube - rings on before
filling - in every other respects except as
to mesh of green flake - same as 350 - to be
run the same - flake thro 20 mesh,
9000 Co flake 4500 glucose —
4500 glucose

Wt 6.085
Double T 54
OAL 272

Mix ok but dryer (considerably) than
green thro 20 - but it would be practically
notice green in many cases is
aggregates - so it may not be any
better than thro 20,

	223	224	225	226		227	228
365	882	890	885	882	AFTER	862	857
66	850	852	850	847	250	820	826
67	835	835	832	832	HOT	822	823

366 Dup 365

Wt 5.925
Double T 49
Cal 271

367/ Dup of 365

Wf 5880
Sciubbo T 50
Cal-271

370	5.825	271	48
369	5.651	272	47
368	5.785	271	47

	1	2	3	4	5	6
368	688	866	860	890	891	898
369	581	778	785	831	820	826
370	631	840	850	891	885	897

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
368	AFTER	900	873	875	887	885	AFTER	860	850	850	850	855
69	50	870	845	843	815	835	100	850	842	831	837	842
70	HOT	903	877	887	858	885	HOT	881	872	866	872	877

		167	168	169	170	171		222	223	224	225	226
368	AFTER	813	820	812	818	807	AFTER	820	807	805	800	800
69	150	832	827	817	821	813	200	835	813	815	812	815
70	HOT	865	857	850	853	846	HOT	867	845	850	841	837

		277	278	279	280	281
368	AFTER	775	777			
69	250	802	786			
70	HOT	842	825			

Assemble with Copper Mercury Irons

368 = 21000 green thru 20 fines all in -
21000 absorbed H_2 [illegible] to 21650
9000 flake [illegible] same as 350 -
4500 [illegible] " [illegible]
Double tamps - Nickel plated Tubes -
rings on [illegible] pkg -
Tubes plated 1/4/1000 on side -
All soaked [illegible] 350 -
But they are to be assembled & run with new process Copper Mercury Irons = otherwise run like 350

[illegible]

Wt 5 785
Double T 4.7 Graphited -
Cal 271
Mix very sticky [illegible])

Four) 21650 (24
18000
3650

6) 5785 (964
54
38.4
120
1568.

369 Dup 368

LCf 5.651
Doubtful 47
Cal 272

370 Dup 368

Wet	5,825 –
Doublet	46 –
Cal	271

373	5.884	272	49
372	5.740	272	48
371	5.766	271	48

	1	2	3	4	5	6
371	667	837	838	871	867	875
372	637	800	850	865	853	850
373	612	816	837	865	855	862

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
371	AFTER	870	850	850	835	855	AFTER	865	850	850	857	865
72	50	872	850	850	830	852	100	848	850	843	847	850
73	HOT	823	868	865	840	867	HOT	970	787	846	850	857

AFTER 200 HOT

		167	168	169	170	171	222	223	224	225	226	227
371	AFTER	853	843	833	843	837	832	825	830	826	820	
72	150	855	838	827	845	822	210	840	828	827	821	
73	HOT	850	840	827	845	832	792	827	830	827	815	

		277	278
371	AFTER	830	811
72	250	815	800
73	HOT	782	782

371 — Dup of 368 except [illegible] tubes —
21000 [illegible] to 21670 —
[illegible]

Wt 5.766
Doublet 48
Cal 271

Mix very sticky & similar to all the previous. Except 253 which was not very sticky

372 · Dup of 371

Cbf 5,740'
Doubcot 48
Cal 272

373 Rape of 371

Lot 5,884
Roufo T 49
Cal - 272

376	5,849	272	49.
375	5,893	273	50
374	5,850	272	49.

	1	2	3	4	5	6
374	572	788	821	860	851	855
375	618	800	828	858	853	866
376	692	867	877	900	894	902

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
374	AFTER	873	857	855	827	860		870	857	856	860	867
75	50	893	875	872	855	877		885	881	868	875	878
76	HOT	905	880	880	887	882		847	897	883	885	887

		167	168	169	170	171		222	223	224	225	226
374		866	852	850	850	847		862	845	846	843	840
75		876	871	850	860	850		882	860	865	857	853
76		891	882	870	875	870		887	867	875	862	862

		227	228
374		837	827
75		840	835
76		855	845

374 - 21000 absorbed To 21620 — 1hr 20/ [illegible]
Cobalt plated [illegible]-rings put on
after pkg —
Everything else same as 350 Except
flake [illegible] 20 — [illegible]
tested like 350 —
0 4500 glucose,

Wt 5 850
Double T 49
C 272
Mix same sticky + exactly same as previous
Except 353 —

375 Dup 374

Wf 5843
£T 50
C 273.

376 Dup 374

Lot 5849
Double T 49-
Cal-272

379	5.415	273	48
378	5.842	273	48
377	5.979	273	50

	1	2	3	4	5	6
377	622	847	880	926	912	925
378	656	866	880	916	900	915
379	681	887	898	935	927	935

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
377	AFTER	945	910	917	900	910		928	918	907	910	917
78	50	915	877	900	875	925		900	898	885	887	896
79	HOT	935	900	915	896	917		917	907	898	900	907

		167	168	169	170	171		222	223	224	225	226
377		930	921	913	915	903		937	912	911	907	910
78		900	897	885	890	[illegible]		917	895	895	886	890
79		921	907	896	900	892		920	897	897	887	892

		277	278									
377		926	906									
78		910	892									
79		907	888									

377 = 21000 absorbents 21665
thru 20 fines all in –
Nickel tube-rings to be put on after
pkg – 9000 Cob 4500 glucose –
Everything else like 350 except fines
thru 20.
Run etc same as 350

Cof 5.979
Double T 50
C 273
Mix same quality as previous groups

378 Dup 377

Wt 51.8.12
Double T 48
C 273

379 – Dup 377

Wef 5.415 ?
Doublet 48
Cal 273

382	6.181	245	49
381	6.141	245	48
380	6.217	245	49

	1	2	3	4	5	6
380	517	725	792	837	837	850
381	567	797	850	892	890	900
382	520	750	818	863	865	882

Hot Endurance.

		57	58	59	60	61		112	112	114	115	116
380	AFTER	875	875	888	867	886		900	902	892	900	907
81	50	893	892	900	875	900		872	S.G	825	830	822
82	HOT	898	896	900	877	900		897	895	880	881	882

		167	168	169	170	171		222			
380		967	717	712	697	687	C.	O.	5-14-06		
81		525	512	525	537	535					
82		622	625	635	627	626					

380											
81											
82											

380 — 21000 [illegible] to 21705. [illegible]
Dup of 350 Except Cobalt thro 20 —
9000 Co — 1500 — [illegible] —
Cobalt plated tube Corrugation on
one side 1.50 at [illegible] rings on before Co.
Work same as 350, —

Wt 6 217
Double T 49 —
Cal Cal 245 2 Rings broken in [illegible]
Mix same as usual as to quality.

381 - Exp 380

CWF 6.141
Double T 45
Coal 245 - 2 Rungs [illegible] in pressing

382 Rup 330 —

Lot 6.181 .49-
RoubCo T 245- 2 [illegible]
CaC 245-

385	5.857	271	48
384	5.920	271	48
383	5.840	272	48

	1	2	3	4	5	6
383	507	875	852	882	870	883
384	587	790	830	867	862	877
385	577	800	847	882	882	823

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
383	AFTER	907	882	885	867	895		897	892	881	883	888
84	50	900	885	890	867	896		893	895	880	895	888
85	HOT	900	886	900	868	896		912	900	888	893	9.00

		167	168	169	170	171		222	223	224	225	226
383		900	887	881	887	882		900	872	881	867	870
84		900	888	886	891	885		900	882	887	872	870
85		908	900	890	897	892		912	895	895	888	88

		277	278
383		877	865
84		892	881
85		900	883

383 21000 - [illegible] to 2161 —
Thru 20 [illegible] all in —
9000 [illegible] of Coke [illegible] — thru 20 —
3500 of Glucose —
[illegible] Worked same as 350 —
Cobalt plated tube rings on before
pkg. —

WT 5.840
Density T 48
Cal 272

Mix sticky & good, same as the others except think it little more sticky notwithstanding has only 3500 glucose —

384 Dup of 383

UCf 51920
[illegible] I 48
Cal 271

385 Dup of 383

Wt. 51,857
Double T 48-
CaC-271

From 350 to 386 [illegible] bars always inside — [illegible] bars will be used on all tubes —

388	5.900	272	48
387	5.960	271	54
386	5970	272	51

	1	2	3	4	5	6
386	630	826	872	911	905	916
387	615	828	882	928	925	933
388	707	900	932	962	950	955

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
386	AFTER	908	898	905	880	910	AFTER	662	662	667	700	685
87	50	900	907	913	895	925	100	937	935	926	936	942
88	HOT	955	942	953	920	950	HOT	960	945	935	938	948

		167	168	169	170	171		222	223	224	225	226		277	278	279	280	281
387	AFTER	942	943	935	946	932	AFTER	923	905	910	901	897	AFTER	885	870			
88	150	565	950	945	955	932	200	932	930	932	922	917	250					
	HOT						HOT						HOT	905	905			

	117	118	119	120		171	172	173	174	175		226	227	228	229	230
386	710	912	927	915	AFTER 150 HOT	927	922	922	920	920	AFTER 200 HOT	925	912			

386 — 21000 [illegible] H₂O to 21700
thru 20 [illegible] —
Cobalt [illegible] 9000 — thru 20 —
Only 2500 glucose
Manganese [illegible] 350 —
Cobalt plated tube rings [illegible]

Wt. 5970

Rubber T 51

Cal 272

Mix worked too dry but green was covered freely by glucose — it may [illegible] 3500 to [illegible] as good as 4500 [illegible]. Green [illegible] 20 [illegible] —

387 Dup 386—

Wt 5960
CaC 271
Gen Temp 54

391	5,828	272	50
390	5,814	272	49
389	5,817	271	50

	1	2	3	4	5	6
389	670	843	875	841	858	882
390	600	716	150	182	760	765
391	645	825	852	830	848	850

Hot Endurance

		57	58	59	60	61		112	113	114	115
389	AFTER	920	920	900	900	902		912	891	900	890
90	50	897	895	892	880	863		900	873	882	895
91	HOT	902	900	892	890	887		906	878	888	880

	116		167	168	169	170	171		222	223	224
389	S.C.		912	905	912	897	891		885	851	857
90	875		892	892	892	882	876		861	840	840
91	835		900	897	902	893	888		883	860	85-

	225	226
389	850	865
90	846	850
91	855	857

389 - 21000, a[illegible] 21720
Thru 20 [illegible] in —
Cobalt [illegible] tube, corrugated
one side, 4 pict rings on after
filling [illegible]
9000 Co flakes [illegible] 20
4000 - [illegible]
Manipulate to Wt. 350 —
Cor 150 atmos -

Wt 5,817
Cal 271
Dall T 50

Mix not so sticky as usual

Cracked in assembly [illegible] they were made [illegible] Carbide [illegible] Coarse

390 Dup 384

Wt	5.814
Cal	272
Rubber T	48

This tube was one of four that were not numbered but could recognize it from others as the rings were loose. This one did not have the 24 hrs KOH soaks and changed, but simply soaked up stairs 24 hrs and run in the same KOH.

391 Dup 359

Wat	5,828
Cal	272
Fancy	50

394	5.854	.250	48
393	5.753	.245	49
392	5.943	.248	48

	1	2	3	4	5	6
392	500	832	877	900	900	917
393	505	830	842	866	856	870
394	517	735	792	837	837	845

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
392	AFTER	938	967	918	895	920		930	920	908	911	918
93	50	888	867	885	850	875		882	875	865	867	880
94	HOT	900	872	880	850	876		882	875	865	867	880

		167	168	169	170	171		222	223	224	225	226
392		925	915	895	911	898		740	910	910	902	898
93		893	868	850	867	860		881	865	862	857	850
94		867	848	830	845	830		845	825	822	815	800

		277	278	279	280	281						
392		872	862									
93		842	821									
94		672	681									

392 21000 absorbed H_2O 21855

9000 reg Cobalt flake thru 20
4000 [illegible]
Nickel plated Tube, Balls on after pkg — Corrugated on one side before they are put in
150 atmospheres — Everything else as 350 —

Wt 5.943

Cal 248 —

Dim CT 48

Mix same as usual — perhaps a little more sticky on acct larger absorption H_2O than usual —

393 Dup 392

Wt 5,753
Cal 245
T Douse #9

394 Dup 392

Wt 5,854
Cal 250
Double T. 4.8

All tubes so far

Double temps. all thereafter
same except when otherwise
stated —

397	6.200	243	49
396	6.255	244	50
395	6.283	246	49

	1	2	3	4	5	6
395	423	700	795	862	875	896
396	462	730	812	878	887	893
397	465	742	827	883	887	892

Hot Endurance

		57	58	59	60	61	112	113	114	115	116
395	AFTER	932	925	943	906	940	430	600	650	700	770
96	50	930	915	942	900	942	940	936	922	928	940
97	HOT	931	915	918	896	922	912	917	908	913	920

		167	168	169	170	171	222	223	224	225	226
395		931	927	918	932	927	955	932	932	925	918
96		947	935	927	940	925	945	932	932	927	927
97		878	915	910	912	912	940	922	923	918	917

395. Dup of 392 —
Nickel tube - Except rings put on
After - packing & Corrugated one
side 150 atmospheres
21000 green absorbed to 21900 -
4000 glucose
9000 Cobalt [illegible]

Wt 6.283

CaC 246

T 49

after Corrug(d) - rings put on

		277	278	279	280	281
395		906	867			
96		875	850			
97		857	827			

396 - Dup 395

Cot 62.55
Cal 244
T ~~234~~ 50

397 Sup 395

COT 6.100
CaC 243
T 49

400	5,666	249	49
399	5,710	246	48
398	5,814	248	48

	1	2	3	4	5	6
398	513	741	781	827	830	842
399	480	722	786	825	835	820
400	527	722	787	812	830	810

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
398	AFTER	876	850	876	863	857		883	870	870	877	885
99	50	850	837	873	857	855		848	846	835	840	846
400	HOT	858	837	867	857	855		861	858	837	832	852

		167	168	169	170	171		222	223	224	225	226
398		875	867	852	862	857		797	775	782	770	750
99		770	772	767	770	755		650	667	685	670	642
400		747	755	743	745	745		677	690	690	640	685

		277	278
398		635	663
99		571	600
400		556	595

398 — 21000 [illegible] H_2O To 21670

Cobalt plated tube rings on
after packing — Corrugated
150 at before rings put on
9000 Cobalt [illegible]
4000 [illegible]

Wt 5.814

Cal 248

T 48

399 Dup 398

Wt 5.410

CaC 246

T .48

400- Dup 398

Wt 5,668

CnC 249

J 49-

403	5593	271	50
402	5,648	271	48
401	5,588	272	47

	1	2	3	4	5	6
401	665	813	820	857	860	850
402	662	805	818	853	862	857
403	607	781	792	837	850	840

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
401	AFTER	872	847	870	877	868		855	862	850	851	865
02	50	882	850	877	880	870		855	865	852	810	864
03	HOT	850	842	862	865	857		855	867	855	857	878

		167	168	169	170	171		222	223	224	225	226
401		867	862	847	851	850		872	850	850	845	841
02		882	872	862	867	862		882	877	872	867	865
03		882	881	866	867	862		890	870	866	857	855

		277	278
401		855	842
02		850	843
03		826	818

401 – Green thru 20 furnace [illegible] 20

8000 instead goes Cobalt [illegible]

21000 absorbed to 21639 –

Now change to 8000 Cobalt [illegible]

4000 glucose,

[illegible]

Cobalt placed tubes – Ring on before packing –

Wt 5588

T 47

C 272

402 Dup of 401

Wt 5648
Cal 271
T 48

403 Dup of 401

Wt 5593
Cal 271
T 50

406	6.220	277	49
405	6.315	272	48
404	6.365	279	49

	1	2	3	4	5	6
404	707	892	937	963	975	962
405	646	821	870	905	906	900
406	690	865	908	932	947	932

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
4.04	AFTER	972	952	977	885	981		1000	992	977	977	978
05	50	912	897	927	918	915		947	935	918	922	940
06	HOT	895	900	930	930	925		945	930	918	920	940

		167	168	169	170	171		222	223	224	225	226
404		1015	1005	990	992	967		997	992 assembly wrong	992	980	976
405		922	925	912	920	915		S.C.	S.C.	877	917	937
06		927	928	916	925	915		907	900	900	900	890

		277	278									
404		995	978									
05		922	910									
06		857	860									

404 — Dup of 401

Except 7000 Cobalt [illegible] thru 20

21000 green thru 20 - added to .21900 green thru 20 fines all in . 4000 g [illegible]

Wt. 6.365

Cal 279

T 49

Mix slightly less sticky than usual probably due to extra amount of [illegible]

405 Dup 404

Wt 61315

Cal 273

T 48

406- Dup of 404 —

Calf 6,230
CaC 277
T 49

409	6,137	272	49
408	6,265	272	51
407	6,290	273	48

	1	2	3	4	5	6
407	675	912	966	1000	1007	1000
408	547	745	900	850	863	843
409	630	927	867	903	910	895

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
407	AFTER	977	965	1000	991	987		992	982	970	971	992
08	50	850	842	877	870	826		898	893	880	875	906
09	HOT	860	870	905	898	897		897	888	873	875	894

		167	168	169	170	171		222	223	224	225	226
407		980	982	966	965	955		972	965	957	950	943
08		892	900	892	900	880		900	900	895	890	886
09		867	880	868	880	867		877	880	880	870	866

		277	278
407		890	903
08		882	870
09		832	837

407 = Dup of 401

Except 6000 Ca [illegible] thru 20
4000 [illegible]
21000 [illegible] to 22140
green thru 20 fine all in

Wt. 6290

CaC 273

T 48

Very slightly [illegible] than usual. Green shows up considerable but think there will be no segregation

408 Dup 407

Wt 6.265

CaC 272

T 51

409 Dup 407

Wt 6.137
Cal 272
T 49

412	5.754	272	49
411	5,590	272	50
410	5,701	273	47

	1	2	3	4	5	6
410	730	866	856	902	917	906
411	730	860	850	900	897	893
412	752	891	885	927	925	922

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
410	AFTER	935	908	860	912	915		917	905	888	892	904
11	50	920	886	918	912	907		907	887	875	872	884
12	HOT	950	917	945	945	914		946	931	915	910	927

		167	168	169	170	171		222	223	224	225	226
410		905	898	893	900	890		900	885	883	876	875
11		850	861	850	850	845		850	842	845	837	817
12		906	912	893	892	887		892	885	882	870	860

		277	278									
410		845	850									
11		755	755									
12		800	817									

410 Dup of 401

Except 5000 Cobalt flake thru 20
4000 glucose —
21000 absorbed H_2O to 21631
grain thru 20 [illegible]

Lot 5.701

Cal 273

T 49

Up to 700 water absorbed for 21000 makes the most sticky mix — as water increases the stickiness [illegible] —

411 Dup of 410

Wt	5590
Cal	272
T	50

412 Rep 410

Wt 5.754
Cal 272
T 49

415	Spot 4		
414	5,645	273	50
413	5,645	273	50

	1	2	3	4	5	6
413	697	825	826	862	863	856
414	727	878	886	925	940	936
415	772	912	907	950	962	957

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
413	AFTER	903	887	910	898	892		875	872	862	851	865
14	50	925	885	921	921	915		877	840	877	868	883
15	HOT	918	917	957	921	917		927	908	900	902	921

		167	168	169	170	171		222	223	224	225	226
413		850	832	828	825	825		680	727	740	727	712
14		787	812	811	812	807		670	737	760	757	750
15		845	865	855	858	846		840	845	850	840	840

		277	278
413		612	700
14		650	717
15		747	755

413 Same as 401

Except 4000 Cobalt flake Two and
4000 [illegible] —
21000 absorbed H_2O to 21700 —
[illegible] thru 20 [illegible]

Cwt 5.645

Cal 273

T 50

Usual sticky mix —
Think there will be no segregation
[illegible] much in Endurance —

414 Dup 413

Lot 51645

Cal 273

T 50

415 Dup 413

LiF

CaC } last

T

418	5,730	274	48
417	5,761	273	47
416	5,925	274	47

	1	2	3	4	5	6
416	741	898	900	932	936	927
417	670	865	902	913	912	902
418	695	878	900	940	941	928

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
416	AFTR	757	917	950	941	940		906	910	895	900	912
17	50	840	888	927	920	917		600	S.C.	370	590	698
18	HOT	918	880	915	915	907		752	812	815	812	818

		167	168	169	170	171		222	223	224	225	22[illegible]
416		737	775	786	786	770		675	725	750	743	747
		117	118	119	120	121		172	173	174	175	
17		670	842	837	827	707		750	770	770	771	
18		670	712	736	733	720		627	680	707	705	

		277	278			
416		615	682			
		226	227	228	229	230
17		711	747			
18		712	637	682		

416 – Same as 401

Except 3000 Cobalt flake thru 20–40 mesh [illegible] –
21000, absorbed H_2O to 21650.
Green thru 20 fines all in

Wt 5,925

Cal 274

T 47

Grain in mix is now predominant & will not segregate I think.

417 Dup 416

Wt 5.761
Cal 273
T 47

418 Exp 416 –

Wt 51730
Cal 274
T 48

421	6.000	272	50
420	6.132	273	49
419	6.036	272	48

	1	2	3	4	5	6
419	626	937	967	1010	1010	993
420	57	700	910	996	1002	992
421	593	887	922	962	970	950

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
419	AFTER	705	735	782	775	780		630	687	677	645	697
20	50	780	775	817	820	815		655	SP.	600	657	663
21	HOT	846	842	882	881	872		680	750	727	740	751

		167	168	169	170	171		222	223	224	225	226
419		445	545	595	612	602		450	550	590	595	592
20		397	525	570	582	572		427	492	522	527	530
21		485	592	622	637	625		462	500	587	595	590

		277	278
419		395	520
20		445	526
21		457	548

419 Same as 401

Except, 2000 Cobalt flake thru 20
4000 Glucose
21000 absorbed H_2O to 21615 -
green thru 20 [illegible]

Wt 6.036

Cal 272

T 48

?

This mix was not sticky probably because weighed wrong & too much absorbed water ~~The~~ This mix will probably not [illegible] but 2000 is entirely made [illegible] I think — only filled 1/3rd of the bottle showing enormous bulk of 9000 Cobalt.

420 Dup 419

Lot 6.132
Cal 273
T 49

421 Dup 419

Wt 6.000

Cal 272 -

T 50

424	6,163	274	50
423	6087	273	50
422	5,880	272	47

	1	2	3	4	5	6
422	565	736	785	745	763	767
423	607	750	793	757	762	772
424	590	761	820	766	780	753

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
422	AFTER	852	877	877	867	855		890	875	882	872	875
23	50	875	897	893	872	855		912	895	903	892	900
24	HOT	912	922	910	902	900		737	910	918	915	918

		167	168	169	170	171		222	223	224	225	226
422		865	856	862	847	837		710	710	705	702	696
23		925	922	925	915	907		793	780	775	775	775
24		887	883	890	880	865		740	737	723	726	731

		277	278									
422												
23												
24												

422 – 21000 absorbed to 21745 –
thru 20 fines all in
Cobalt plated tube,
9000 Cobalt of Cake thru 20 –
4000 glucose –
Packed without rings –

After soaking & drying. they
are to be Corrugated 150 atmos
& Rings put on after drying run like 350 –

Cut 5,880

Cal. 273

T 47

423 Dup 422

Lit 6.099
Cal 273
T 50

424 Dup 423

Cof 6.163
Cal 274
T 5.0

427	5.877	272	48
426	5.932	272	49
425	5.705	272	49

	1	2	3	4	5	6
425	552	730	787	780	797	815
426	500	712	790	800	828	841
427	592	767	817	797	823	850

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
425	AFTER	890	887	875	872	865		880	881	890	881	886
26	50	906	905	900	896	887		920	900	906	900	902
27	HOT	916	912	903	905	905		925	902	906	900	900

		167	168	169	170	171		222	223	224	225	226
425		890	892	895	891	882		896	875	868	867	877
26		925	917	917	915	900		910	883	877	880	890
27		910	915	917	910	892		862	831	832	825	831

425 - Dup of 423 -

Except Nickelplated tube used -

21000 a [illegible] to 21635 -

green thru 20 times all in [illegible] rings put on after soaking & drying - & Corrugating

Wt 5.705

Cal 272

T 49

426 Dup 425

Lot 51932
CaC 272
T 49

427 Dup 425

lot	5,877
Cal	272
T	48

430	5.507	271	49
429	5.652	272	49
427	5.450	273	49

	1	2	3	4	5	6
428	686	812	800	831	850	837
429	692	826	825	857	867	850
430	686	815	812	942	850	837

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
429	AFTER	842	817	837	832	841		S.C.	825	800	818	838
29	50	867	845	850	872	865		872	857	845	858	868
30	HOT	850	825	847	845	842		852	840	830	832	85

		167	168	169	170	171		222	223	224	225	22
428		822	815	800	800	800		840	825	822	817	818
29		857	852	837	833	837		862	847	842	842	84
30		850	847	836	835	830		863	845	837	830	83

		277	278
428		826	807
29		842	878
30		842	873

428: 21000 absorbed to 21602 [illegible]
9000 Cobalt flake thru 20
4000 glucose - Cobalt plated tubes,
Mix to be dried before packing -
Rings on before packing - C

Wt 5.450

Cal 273

T 49

429 Dup 428

Wt 5,652
Cal 272
T 49

430 Dup 428

Wt 5.509
CaC 271
T 49

From 350 to 401 - Every group has
.0001 new CuCo [illegible] Cadmium
KCy - Run thru Hydrogen -
flake thru 20 Mesh Except 350
which was through 15 mesh
All have double Tamped -
All have green thru 20 [illegible]
Except where [illegible] [illegible]
otherwise. All green had water
absorbed to prevent quick drying
of binder - which is a decided
improvement. The green is
the most friable we ever had
Crushed to make minimum fines -
All had same glucose
which is semisolid bought from
Emery [illegible] as best liquid
Glucose - With 1/2 of 21% KOH
with 200cc to tube only [illegible]
the soaking. Unfilled tubes yellow
over night - [illegible] due to action
of KOH on glucose
All mixes show green there is no
Covering the green is broken up
with aggregates of coke distributed
through the flake -

431 - Dup of 428 Made
Except Nickel plated tube.
9000 Co flake
4000 glucose
Mixed dried before pkg -
Rings on before pkg -
21000 green absorbed H_2O to 21650

Wt 5.160

Cal 272

T48

433	5,240	272	49
432	5,229	272	49
431	5,180	272	48

	1	2	3	4	5	6
431	710	772	765	730	744	776
432	713	790	787	760	785	812
433	792	842	830	777	797	837

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
431	AFTER	800	805	800	800	801		811	795	800	795	765
32	50	835	830	817	812	822		835	815	825	812	806
33	HOT	842	840	832	827	835		841	822	832	820	817

		167	168	169	170	171		222	223	224	225	22
431		805	800	800	797	787		782	760	755	752	75
32		815	817	822	817	807		817	782	790	790	78
33		833	825	830	825	815		816	787	782	782	76

		277	278								
431											
32											
33											

432 Dup 431

Wt 5.229
Cal 272
T 49

433 Dup 431 —

Wt 5.240
Cal 272
J 49

436	6.355	273	49
435	6.211	273	48
434	6.304	272	50

	1	2	3	4	5
434	927	900	905	856	868
435	945	923	921	872	882
436	946	922	912	882	893

Hot Endurance

		56	57	58	59	60	112	112	113	114	11
434	AFTER	925	920	910	907	907	916	903	912	905	89
35	50	942	935	930	925	920	930	908	920	908	91
36	HOT	950	950	937	930	923	947	928	937	926	9

		166	167	168	169	170	221	222	223	224	2
434		926	925	930	925	916	925	900	900	896	910
35		935	937	940	932	920	932	907	900	900	9
36		947	945	950	940	925	935	910	900	905	9

		276	277								
434											
35											
36											

Nickel

434 = 21600 absorbed to 21750

9000 Cobalt (Coke 0.001 - thru 20

4000 glucose -

Co plated Tubes - rings on before packing

This group to be charged 10 hours Reg & allowed to rest 10 hours charged again 10 hours rest 10 hours - & so on so it gets 3 charges of 10 hours & three rests of ten hours before discharging — Thereafter run in the regular way 5 complete chg & dischg then to go on hot ~~tests~~ regular -

Wt 6.304

Cal 272

T 50

435 Dup 434

Wf 6211
CaC 273
T 48

436 - Dup 434

Wt 6,385

Cal 273

T 49

439	5.684	272	48
438	5.644	272	48
437	5.525	271	50

	1	2	3	4	5	6
437	623	798	837	782	800	823
438	597	797	846	806	832	845
439	598	775	827	781	797	822

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
437	AFTER	847	852	850	846	843		865	838	850	840	843
38	50	880	882	875	875	870		886	862	871	861	867
39	HOT	850	850	842	840	842		878	850	861	850	857

		167	168	169	170	171		222	223	224	225	226
437		855	847	850	847	837		840	810	810	807	817
38		880	870	880	872	858		865	832	832	832	841
39		887	877	888	880	870		885	850	850	850	86

		227	228									
437												
38												
39												

Made

437 = 21600 absorbed to 21600
9000 Cobalt flake reg 11no 20
4000 g [illegible]
Cobalt plated Tubes –
Rings on before packing –
Pack with Convex plunger rod regularly

~~batt~~

Weight, 5,525

Cal 271

T 50

438 Dup 437

Wt	5,644
Cal	272
T	48

439. Dup 437

Wt	5.684
Cal	272
T	48

442	5.757	272	48
441	5.684	272	48
440	5.675	272	49

	1	2	3	4	5	6
440	632	822	855	800	830	842
441	586	776	805	780	803	818
442	592	785	825	791	822	842

Hot Endurance

		60	61	62	63	64		115	116	117	118	119
440	AFTER	850	860	840	850	845		862	860	862	862	84
41	50	850	857	837	845	842		878	865	865	862	85
42	HOT	857	855	835	837	820		886	872	867	865	85

		170	171	172	173	174		225	226	227	228	229
440		832	847	846	853	857		855	832	833	837	841
41		861	857	850	858	860		865	842	845	848	84
42		861	861	856	862	866		872	852	850	855	84

440 = .2100 absorbed to .21665
9000 Cobalt flake thru 20
4000 glucose
Cobalt plated tube, rings on before pkg —

Ralphs New Copper Mercury [illegible] — To be run 3 times cold then reversed once full time of a reg charge + changed straight — Run 3 times Regular — Keep this up until it has had 3 Runs of 3 each with a reversal between each 3 chgs — Then put on hot ~~test~~ + after 25 hot runs reverse charge it hot once + then put back to regular + let it run its full 50 charges the reversal inclusive — This ~~test~~ is to determine if the Copper has a Good influence —

Lot	5.675
Cal	272
T	49

441—Dup 440

Wf	51,684
Cal	272
T	48

442 Cup 440

Wt	5,759
Cal	272
T	48

445	5,702	272	49
444	5,938	273	45
443	5,854	273	49

	1	2	3	4	5	6
443	657	832	850	816	840	855
444	686	848	870	832	862	880
445	658	840	867	833	860	880

Hot Endurance

		60	61	62	63	64	115	116	117	118	11
443	AFTER	881	875	855	865	862	900	897	882	889	[illegible]
44	50	907	903	880	890	885	925	917	902	885	[illegible]
45	HOT	891	877	868	875	875	912	900	892	892	[illegible]

		170	171	172	173	174	225	226	227	228	229
443		886	878	876	882	885	886	862	860	865	887
44		900	900	891	900	900	910	886	882	885	[illegible]
45		870	878	877	885	892	890	866	862	865	[illegible]

443 = Duplicate of 440
Except use Nickel plated
tubes

21600 [illegible] to, 21600

Wt 5,854
Cal 273
T 49

good [illegible]

444 Dup 443

Wt	5.938
Cal	273
T	48

445 Dup 443.

Wf	5.902
Cal	272
T	49

450	3,400	86-91-93	1003-250 Cor	
449	3,400	88-90-94	"	"
448	3,400	87-94-94	"	"
447	3,400	83-90-91	"	"
446	3,400	88-90-94	"	"

	1	2	3	4	5	6
446	380	433	440	450	455	468
447	367	416	417	432	427	450
448	370	425	442	456	458	473
449	362	415	418	437	442	455
450	350	405	417	433	445	450

Hot Endurance

		57	58	59	60	61		112	113	114	115
446	AFTER	485	495	492	495	490		497	496	502	497
47		475	487	480	478	487		450	452	463	461
48	50	500	503	500	497	502		472	476	485	482
49		467	472	472	470	471		480	475	485	481
50	HOT	492	492	490	490	487		472	480	487	480

		167	168	169	170	171		222	223	224	225
446		495	485	495	495	485		435	421	427	427
47		440	435	443	445	442		390	400	395	393
48		475	470	477	475	467		440	447	437	440
49		447	447	455	457	450		378	393	382	390
50		445	437	447	447	432		367	390	378	391

Made -

446. 21000 absorbed to ———
9000 Cobalt reg flake thru 20
4000 Glucose —

This mix to be put in sequence of Cat

Cups and pressed at 100 atmos.
Smooth press at 250 Atmospheres
Corrugating pressure — 3.4
put in 7 gold Cups —
Regular Frame used —
Run in same way as with
Tubes — Make 5 pockets —
Nickel plated pockets —

Wt 3.4

CaC Center 88 — Sides 90-94

447- Callipers-Center 83-Sides 90 to 91

448 Center 89- Sides 94-97

449 Center 88 Sides 90 + 97

450 Center 86-Sides 91 to 93

451	5.490	272	48
452	5,705	272	49
453	5.596	272	48

	1	2	3	4	5	6
451	707	800	800	768	785	807
452	720	827	840	797	817	830
453	705	805	817	770	786	797

Hot Endurance

		57	58	59	60	61		112	113	114	115	[illegible]
451	AFTER	840	837	832	830	827		840	828	833	825	[illegible]
52	50	887	880	868	880	861		855	845	850	840	[illegible]
53	HOT	855	860	847	845	846		862	840	850	840	[illegible]

		167	168	169	170	171		222	223	224	225	[illegible]
451		827	822	830	822	808		811	782	791	792	[illegible]
52		450	830	800	795	832		821	550	632	838	[illegible]
53		860	847	850	847	838		830	807	800	807	[illegible]

		227	228									
451												
52												
53												

451 – 21000 granulation to 21700
9000 Cobalt flakes [illegible]
4000 Glucose –
Cobalt flakes [illegible] rubbers – rings on before packing =

To be assembled with old Irons taken from Tube cells which were cut out 21st Feby – used the Cells that were the highest, Edison will pick them out
use Irons from old 31 33 + 34

Wt 5490

CoC 272

T 48

452 - Dup 451

Wt	5705
Cal	272
T	49

453 Dup 451

Wof	5.596
Cal	272
T	48

454	5.492	272	48
455	5.491	271	48
456	5.447	273	48

	1	2	3	4	5	6
454	687	815	831	792	807	827
455	650	825	847	817	835	846
456	640	800	828	795	816	820

Hot Endurance

		57	58	59	60	61		112	113	114	115	11[illegible]
454	AFTER	886	872	862	852	857		862	847	852	845	8[illegible]
55	50	842	890	887	887	881		887	871	872	857	86[illegible]
56	HOT	872	848	835	832	835		842	843	843	833	8[illegible]

		167	168	169	170	171		222	223	224	225	226
454		867	857	865	850	845		857	835	835	831	8[illegible]7
55		872	857	877	862	850		857	835	832	830	[illegible]7
56		842	877	832	875	822		850	830	830	825	[illegible]7

		277	278									
454												
55												
56												

454 Duplicate of 451
21[illegible] To — 21600
Except Nickel plated Casting —

Use rims from old 41 45 & 55 —

Wt	5,492
CaC	272
T	48

455 Dup 454

Wt	5,491
Cal	271
T	48

456 Dup 454

Wt	5,447
Cal	273
T	48

457	5,498	271	48
458	5,433	271	48
459	5,323	271	48

	1	2	3	4	5	6
457	617	778	795	740	757	775
458	630	780	792	732	750	773
459	607	737	740	715	742	750

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
457	AFTER	832	820	815	800	810						
58	50	817	815	800	797	810						
59	HOT	800	797	787	775	780						

		167	168	169	170	171		222	223	224	225	226
457												
58												
59												

		277	278	279	280	281					
457											
58											
59											

457 = 21000 - absorbed to 21[illegible]
Green nickel hydroxide not so porous, the sulphate reduced by an extra wash before drying just brought up to lab by Ralph 22nd
Screened thru 20

9000 Cobalt [illegible] thru 20
Cobalt plated tubes — rings on before [illegible]

[illegible] 5498

Cal 271

T 48

This mix is terribly sticky - stiff dough - after flake put in it balled & had hard time break balls still some in - got perfectly dry before putting flake predominant only very little green seen - Must let this kind of green absorb one gram or more water to stop drying up mix

458 Dup 457

Cof 5,433
CaC 271
T 48

459 Dup 457

Wf 5323
Cal 271
748

460	5.573	272	49
461	6.012	272	49
462	5.784	272	50

	1	2	3	4	5	6
460	640	792	802	796	816	835
461	707	890	902	855	878	895
462	610	795	915	780	806	835

Hot Endurance

		57	58	59	60	61		112	113	114	115	1
460	AFTER	837	875	861	850	857						
61	50	950	942	935	927	925						
62	HOT	906	897	892	892	886						

	167	168	169	170	171		222	223	224	225	6
460											
61											
62											

	277	278	279	280	281					
460.										
61										
62										

460 Duplicate of 457
Except use nickel [illegible] C [illegible],
21000 - had given like 20
absorbed to 22.060 -

Cof	5.573
Cal	272
T	49

461 Dup 460

LO-f	6.012
Cal	272
T	49

462 Dup 460

COf	5,784
Cal	272
T	50

463	5.554	273	47
464	5.656	272	47
465	5.624	272	48

	1	2	3	4	5	6
463	655	792	802	785	796	812
464	672	800	817	795	800	822
465	667	808	827	796	803	833

Hot Endurance

		57	58	59	60	61		112	113	114	115	11
463	AFTER	867	857	846	837	842						
64	50	892	887	875	862	871						
65	HOT	882	870	856	850	847						

167 168 169 170 171 222 223 224 225 226

277 278 279 280 281

463 = Duplicate of 457 except
3500 [illegible]
Cabot [illegible]
#kg = 21000 [illegible] 22000-

Wt 5,554

CaC 273

T 47

Mix very stick, doughy but not tough – 3400 w/ 6 [illegible] for the kind of nickel hydrate & mica – 3000 would do about as well I think

464 = Dup of 463

Wt	5.658
Cal	272
T	47

465 Dup of 463 =

Wt	5.624
Col	272
T	48

466	5.659	273	48
467	5.630	273	50
467½	5.625	273	47

	1	2	3	4	5	6
466	605	843	876	830	842	875
46.7	673	843	861	827	833	868
467½	673	832	860	815	821	845

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
466	AFTER	895	887	877	870	871						
67	50	895	882	877	872	871						
67½	HOT	892	881	877	872	871						

	167	168	169	170	171		222	223	224	225	226
466											
67											
67½											

	277	278	279	280	281						
466											
67											
67½											

466 = Dup of 457
Except) 3500 g [illegible]
+ put in Nickel plated [illegible]
rings on before packing —
21000 [illegible] To 22000

LOf 5.659

CaC 273

T 48

467 Dup of 466

Wt	5,630
Cal	273
J	50

467½ Dup of 466.

Wt	5.625
Cal	273
T	47

468	5.434	272	48
469	5.475	272	48
470	5.568	272	50

	1	2	3	4	5	6
468	712	842	852	800	800	832
469	775	873	887	795	822	855
470	713	848	850	797	832	868

Hot Endurance

		57	58	59	60	61		112	113	114	115	11
468	AFTER	167	350	446	530	590						
69	50	870	867	850	850	850						
70	HOT	900	895	882	885	887						

		167	168	169	170	171		222	223	224	225	[illegible]
468												
69												
70												

		277	278	279	280	281						
468												
69												
70												

468 = Duplicate of 457
Except 3500 [illegible]
+ 7000 Cobalt free [illegible]
Cobalt plated tubes, rings on
before [illegible] –
21000 [illegible] to 22060 –

Wf 5,434

Cal 272

T 48

469 Dup 468

Wt	5.475
Cal	272
T	48

470 Dup 468

Wt	5.568
Cal	272
T	50

471 = Duplicate of 457
Except 3500 glucose
7000 Cobalt y [illegible]
But in Nickel plated tubes
range as before p kg
21000 absorbed To

Wt

Cal

T

472 Dup 471

10f

Cal

T

473 Dup 471

Wt.

Cal

T

474	5.697	273	48
475	5.680	273	48
476	5.659	272	48

	1	2	3	4	5	6
474	677	798	802	796	800	827
475	632	787	796	786	800	817
476	657	772	780	775	775	802

Hot Endurance

		57	58	59	60	61	112	113	114	115	116
474	AFTER	867	867	850	847	850					
75	50	856	850	837	835	835					
76	HOT	850	847	836	837	836					

	167	168	169	170	171	222	223	224	225	226
474										
75										
76										

	277	278	279	280	281					
474										
75										
76										

474 = 21000 absorbed to 21600 —
Regular friable green cuz been only
in 350 etc - lbs 20 —
Cobalt plated tube to be packed.
without any rings then oval rings
put on which are 10 to 15/1000 larger
than the outside of tube, the oval
form serving to hold rings in position
until the packets have swelled
9000 Cobalt flake per lbs 20
4000 glucose —

Wt	5.697
Cal	273
T	48

475 – Dup 474

Wt 5.680
Cal 273
T 48

476 Dup 474

Wt	5.659
CaC	272
T	48

477	5.799	273	48
478	5.895	272	49
479	6.097	273	48

6	1	2	3	4	5	6
477	646	825	857	855	850	881
478	612	812	855	855	857	880
479	692	867	897	892	897	923

Hot Endurance

		57	58	59	60	61	112	113	114	115	1
477	AFTER	940	927	927	915	908					
78	50	915	905	900	895	895					
79	HOT	967	952	950	950	941					

		167	168	169	170	171	222	223	224	225	6
477											
78											
79											

		277	278	279	280	281					
477											
78											
79											

477 = Dup of 474

Except use nickel plated tubes.

green 21000 absorbed to 21672

Cof	5.799
CaC	273
T	48

478 Dup 474

Lit	5,895
CaC	272
T	49

479 - Dup 474

Wt	6,097
Cal	273
T	48

480	6,003	273	51
481	5.818	272	50
481½			

	1	2	3	4	5	6
480	667	840	860	896	905	892
481	610	810	850	896	915	897
481½	—	—	—	—	—	

Hot Endurance

		57	58	59	60	61		112	113	114	115	1
480	AFTER	907	882	907	900	897						
81	50	900	885	916	900	900						
81½	HOT	—	—	—	—	—	—	—	—	—	—	—

		167	168	169	170	171		222	223	224	225	·16
480												
81												
81½	—	—	—	—	—	—	—	—	—	—	—	—

		277	278	279	280	281						
480												
81												
81½	—	—	—	—	—	—	—	—	—	—	—	—

480 – This is remainder of mix 353 + 356 – put together – to [illegible] of 353 as this had only [illegible]

See weight of [illegible] –

.9000 Co 4500 glucose

Cobalt plated (tube [illegible]) [illegible]

flag – Rings pure Nickel

Wt 6.003

Cal 273

T 51

481 Dup of 480

Wt 5,818

Cal 272

T 50

481½ Dup 480-

Wt

CaC

T

482	5.460	272	48
483	5.521	273	48
484	5.443	271	49

	1	2	3	4	5	6
482	692	822	808	845	852	845
483	590	787	787	825	841	825
484	635	788	785	812	830	812

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
482	AFTER	845	825	847	847	843						
83	50	847	822	845	846	842						
84	HOT	843	820	840	847	837						

		167	168	169	170	171		222	223	224	225	226
482												
83												
84												

		277	278	279	280	281						
482												
83												
84												

482 This is remnants of Mix 368 & 371 —
Used to Duplicate 356 — which had
iron bands on before pkg —
Nickel plated tube bands on before pkg.
Rings pure nickel

Wt 5.46
Cal 272 [illegible] possibly wrong
T 50 48.

483 Dup of 482

Wt 5,521

CaC 273

T 4d

484 Dup 482

Wt 5443

Cal 271

7-49

484½	5,956	272	48
485	5,687	271	49
486	5,690	271	49

	1	2	3	4	5	6
484½	675	820	845	842	840	862
485	740	862	978	831	847	872
486	675	805	817	797	800	832

Hot Endurance

		57	58	59	60	61		112	113	114	115	6
484½	AFTER	927	922	910	910	900						
85	50	917	906	902	900	896						
86	HOT	880	872	856	852	851						

		167	168	169	170	171		222	223	224	225	26
484½												
85												
86												

		277	278	279	280	281						
484½												
85												
86												

484½ Remnants of 371+374 mix - to Duplicate 368 which had iron rings on by mistake —

Nickel plated tubes, rings out before pkg —

These are to be run with Ralph's new Copper Mercury Trans

Rings pure nickel

Wt 5,956-

Cal 272

T 49

485 Dip 484½

Wt 5687

Cal 271

T 49

486 Dup 484½

Vot 5.690

Cal 271

T 49

487	5.610	271	48
488	5.648	270	49
489	—	—	—

	1	2	3	4	5	6
487	750	862	870	827	822	872
488	700	816	830	805	813	855
489	—	—	—	—	—	—

Hot Endurance

		57	58	59	60	61		112	113	114	115
487	AFTER	915	898	890	888	843					
88	50	908	896	875	878	860					
89	HOT	—	—	—	—	—					

		167	168	169	170	171		222	223	224	225
487											
88											
89											

		277	278	279	280	281					
487											
88											
89											

487 'Remnants left from 401-'
Do Duplicate with 1 or 2 tubes
if there is enough 401 — as old 401
had iron Rings 'put on by mistake,

Wt 5.610
CaC 271
T 49

488 Dup of 487.

Wt 5.648.

Cal 270

J 49

489 - Dup 487

Wt

Cal

T

490	5,710	272	48

	1	2	3	4	5	6
490	720	882	897	942	943	968

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
490	50 HOT	957	962	937	931	921	100 HOT					

		167	168	169	170	171		222	223	224	225	226
490												

490 Duplicate of 404 -
in Cobalt plated tube with
pure nickel rings iron plat rings
on 404 by mistake
Only changed rings for 1 tube.

Wt 5,710

Cal 272

T 48

491	5.430	272	48	

	1	2	3	4	5	6
491	750	858	870	911	906	935

Hot Endurance

		57	58	59	60	61		112	113	114	115	11
491	50 HOT	927	907	900	900	900	100 HOT					
		167	168	169	170	171		222	223	224	225	2
491												
491												
491												

491— Remnant of 410—
Makes 1 Cube only
poor nickel rings old graphited [illegible] rings

Wt 5,430

Cal 272

T 48—

492	5.685	272	48

	1	2	3	4	5	6
492	792	913	982	1003	1007	1025

Hot Endurance

		57	58	59	60	61		112	113	114	115	11
492	50 HOT	950	975	975	972	936						

	167	168	169	170	171		222	223	224	225	22
492											

492 — Remnant, 413 —

pure nickel [illegible] — old group [illegible])
[illegible] —
([illegible] enough to make 1 batch

Wt ~~5910~~ 5.685
Cal ~~272~~ 272
T ~~48~~ 48

493 | 5.446 | 272 / 48

	1	2	3	4	5	6
493	557	722	753	727	732	768

Hot Endurance

		57	58	59	60	61		112	113	114	115
4.93	50 HOT	822	817	800	800	800					

	167	168	169	170	171		222	223	224	225
493										

493 — Remnants of 350 - which had
iron rings on by [illegible] -
Enough for 1 tube only

Wt 5446

Cal 272

T 48

494	5.714	272	50
495	5.669	271	48

	1	2	3	4	5	6
494	725	850	866	835	840	865
95	710	821	840	800	808	843

Hot Endurance

		57	58	59	60	61		112	113	114	115
494	50	920	907	900	900	885					
95	Hot	897	877	710	800	785					

	167	168	169	170	171		222	223	[illegible]	[illegible]
494										
95										

494 Remnant of 383 to Dup 383 as
Iron rings were put on by mistake
[illegible] rings —

Weight 5714

CaC 272

T 50

495. Dup of 494

LOF 5669
Cal 271
T 48

496	5,922	272	48
497	5,690	271	48

	1	2	3	4	5	6
496	775	910	947	930	932	950
497	772	897	917	903	905	922

Hot Endurance

		57	58	59	60	61		112	113	114	115
496	50	921	952	950	932	936					
97	HOT	925	906	890	875	891					

		167	168	169	170	171		222	223	224	225
496											
97											

496 = Remnants of 365 - [illegible] iron rings on worn nickel rings
Cobalt plated carbon rings on [illegible] pkg —

Wt 5922

Cal 272

T 48

497. Dup 490 –

UaC 5690

CaC 271

T 48

498	6,007	271	49

	1	2	3	4	5	6
498	662	848	883	857	892	897

Hot Endurance

		60	61	62	62	64		115	116	117	118
498	50 HOT	912	912	893	900	892					

	170	171	172	173	174		[illegible]	226	227	228
498										

498 21000 absorbed to 21705
9000 Co flake
4500 glucose –
Rings on before loading
Cobalt plated tubes –
to be [illegible] with Ralph's
New Copper Mercury Train –

Wt 6007

Cal 271

T 49

499	5.443	272	49
500	5.430	271	49

	1	2	3	4	5	6
499	747	841	842	800	817	847
500	762	850	850	791	797	847

Hot Endurance

		57	58	59	60	61	112	113	114	115	116
499	50	885	875	853	838	850					
500	Hot	870	860	848	835	847					

	167	168	169	170	171	222	223	224	225	226
499										
500										

499 = Remnants of 428 –
To duplicate 428 but with
Nickel rings on Goffra pkg instead
of iron as in 1st lot,

Lot 5.443

Cal 272

T. 49

500 Dup 499.

Tot 5,430
Cal 271
T - 49

501	6.711	271.	49

	1	2	3	4	5	6
501	750	910	932	902	905	933

Hot Endurance

		57	58	59	60	61		112	112	114	115	11
501	50 HOT	945	938	930	917	917						

		167	168	169	170	171		222	223	224	225	22
501												

501 = Remnants of 354 — [illegible] rings
This is to duplicate it with
Nickel rings — on before pkg
Nickel plated tubes —

U f 6.711

Ca f 271

T 49.

Contamination only 14% in 354 not near so [illegible]

This [illegible]

502	5,828	272	48	
503	5,684	272	49	
504	5,713	273	48	Grid not numbered so could not include in group.

	1	2	3	4	5	6
502	667	840	875	862	862	892
503	645	812	842	832	830	850

Hot Endurance

		57	58	59	60	61	112	113	114	115	116
502	50	920	917	917	900	892					
03	Hot	893	892	875	877	872					

	167	168	169	170	171	222	223	224	225	226
502										
03										

502 = 21000 absorbed to 21710 —
thro 20
9000 Cobalt flake NOT run
through Hydrogen
4060 glucose
Cobalt flake thro 20 mesh —
Cobalt plated tube rings on before pkg

LOT 5.828

Col 272

T 48

Mix with flake more bulky
than flake thru H,

3.52 grain —

503 Dup 502

Wt 5.684

Cal 272

T 49

504 Dup 502:

Wt 5.713
Cal 273
T 48

505	5.774	273	49	Grid not numbered so could not include in group.
506	5.709	273	50	
507	5.587	273	50	

	1	2	3	4	5	6
505	642	812	843	837	850	877
506	—	—	—	—	—	—
507	717	847	855	822	835	850

Hot Endurance

		57	58	59	60	61		112	113	114	115
505	AFTER	917	905	900	897	892					
06	50	—	—	—	—	—					
07	HOT	895	880	870	875	867					

	167	168	169	170	171		222	223	224	225	226
505											
06											
07											

505 Duplicate of 502

Except Nickel plated tubes,

21600 absorbed to 21732

Wt 5.774

Cal 273

T 49

Mix very sticky —

finished with some dull areas

Bulky [illegible] of Cooke than [illegible]

506 Dup 505

Wt	5,709
Cal	273
T	50

507 Dup 505

Wt	5.587
Cal	273
T	50

508	5,216	271	47
509	5,138	272	51
510	5,236	272	48

	1	2	3	4	5	6
508	700	780	770	732	727	772
509	696	747	737	705	710	750
510	682	739	740	708	717	762

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
508	AFTER	820	800	780	778	765						
09	50	790	782	767	770	767						
10	HOT	792	792	787	787	765						

		167	168	169	170	171		222	223	224	225	226
508												
09												
10												

508 = 21000, absorbed to thru 20 21600

9000 Cobalt flake thru 20

4000 glucose

Cobalt placed 1/2 oz. rings on before packing.

Packed 50 Single Tamps

Wt 5,216

Cal 271

T 47

3·15 grain—

509-Dup 508

Wt	51,138
Cal	272
T	51

510 Dup 508

Wt 5,236
Cal 272
T 48

511	6.239	271	50	
512	6.131	272	48	
513	5.889	271	49	Grid not numbered so could not include in group.

	1	2	3	4	5	6
511	608	835	882	890	897	920
512	611	850	905	910	912	938
513	—	—	—	—	—	—

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
511	AFTER	963	957	950	952	930						
12	50	987	975	970	962	950						
13	HOT	—	—	—	—	—						

		167	168	169	170	171		222	223	224	225	226
511												
12												
13												

511 Duplicate of 508

Except metal plated tubes
rings on before pkg
50 Single Temp

21000 absorbed to 21688

Wt 6.239
Cal 271
T 50

512 Dup 511

Wt	6,131
Cal	272
T	48

513 Dup 511

Wt	5.889
Cal	271
T	.49

I notice that these mixes the holes of the tubes dont close up like reg. grafite mix – They seem to be as open as they are in the original strip – also with good flake there is ample flake on the surface of the cylinder ~~[illegible]~~ of mix after the tube is opened & stripped from it

514	5.637	272	48
515	5.588	272	48
516	5.276	272	48

	1	2	3	4	5	6					
514	597	803	850	880	816	845					
515	656	808	826	846	790	817					
516	667	777	785	802	755	780					

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
514	AFTER	277	882	881	865	866						
15	50	862	857	840	837	838						
16	HOT	828	820	800	800	800						

		167	168	169	170	171		222	223	224	225	
514												
15												
16												

514 21000 green absorbed to 21.720
9000 Cobalt flake thro 20 -
4000 glucose -
Cobalt tube plated, rings on before packing -

In each cell put 21% KOH, Containing 250 Milligrammes of Silicate of Potash in each cell

Wt 5.637

Cal 272

T 48

Cracked one end

515 Dup 514

Wt 5.588
Cal 272
T 48

516 Dup of 514 –

Wt ~~Cal~~ 5.276

Cal 272 ✓

T 48

cracked one end

517	5.491	272	48
518	5.355	272	49
519	5.504	272	48

	1	2	3	4	5	6					
517	640	791	811	835	795	821					
19	641	778	786	808	762	792					
19	683	840	850	880	810	847					

HOT ENDURANCE

		57	58	59	60	61		112	113	114	115	116
517	AFTER	881	866	847	746	847						
18	50	930	820	802	805	800						
19	HOT	887	875	881	S.C.	847						

	167	168	169	170	171		222	223	224	225	226
517											
18											
19											

517 - Duplicate of 514

21000 [illegible] to 21,630

Except Nickel plated tube

250 Milligram Silicate [illegible]

Each cell —

Wt 5.491

Cal 272

T 48

518 Dup of 517 cracked one end.

Wt 5.355

Cal 272

T 49

519 Dup of 517

Wt 5.504

Cal 272

T 48

520	5.604	272	.48
21	5.214	272	47
22	5.279	272	48

	1	2	3	4	5	6
520	542	745	773	805	738	742
21	601	692	685	693	637	655
22	600	722	720	740	662	682

Hot Endurance

		57	58	59	60	61		112	113	114	115
520	AFTER	600	725	700	700	697					
21	50	527	550	522	507	512					
22	HOT	565	575	537	537	532					

	167	168	169	170	171		222	223	224	225	226
520											
21											
22											

520 Duplicate of 514
Except, put in Each cell -
250 Milligrammes Metallic
Aluminum in Each cell
Cobalt plated pocket range
[illegible] 21000 grain absorbed to 21.600

Wt 5.604
Cal 272
T 48

521 Dup 520

Wt 5.214
Cal 272
T 47

522 Dup 520

Wt 5.279
Cal 272
T 48

523	5,795	272	50
24	5.620	272	50
24½	5,450	272	50

	1	2	3	4	5	6
523	503	693	725	800	705	725
24	500	676	700	722	692	692
24½	530	670	687	687	640	665

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
523	AFTER	295	620	585	578	580						
24	50	610	621	597	595	592						
24½	HOT	487	595	447	570	562						

		167	168	169	170	171		222	223	224	225	226
523												
24												
24½												

---

523 Duplicate of 514 —
Except Nickelplated
tubes rings on before pkg
· 250 Milligrammes Metallic Aluminum
in Each cell 21000 grains changed to 21.730

Wt 5,795
Cal 272
T 50

524 Dup 523

Wt 5.620 Cracked one end
Cal 272
T 50

524½ Dup 523

Wt 5,450
Cal 272
T 50

This balled terribley owing to its being very cold the Glucose was very dense.
Mix got very dry before I broke up the ball.

525	5.554	272	49
26	5.537	272	48
27	5.515	272	48

	1	2	3	4	5	6
525	615	775	795	822	780	795
26	616	793	812	836	792	802
27	700	820	823	843	795	715

Hot Endurance

		57	55	59	60	61		112	113	114	115
525	AFTER	855	850	832	827	830					
26	50	865	862	848	841	846					
27	HOT	870	855	845	840	845					

	167	168	169	170	171		222	223	224	225	226
525											
26											
27											

525 Duplicate 514
Except Each cell put in
250 Milligrammes Sulphate Copper
Cobalt plated tube rings on
before pkg 21000 absorbed to 21700
Each cell

Wt 5.554
Cal 272
T 49

526 Dup 525
Wt 5.537
Cal 272
T 48

527 Dup 525
Wt 5.515
Cal 272
T 48

528	5.547	272	48
29	5.382	272	48
30	5.276	272	48

	1	2	3	4	5	6
528	575	715	737	761	720	750
29	600	700	722	746	707	737
30	605	748	770	792	750	781

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
528	AFTER	796	790	775	772	775						
29	50	777	770	750	747	745						
30	HOT	837	827	812	805	806						

		167	168	169	170	171		222	223	224	225	226
528												
29												
30												

528 - Dup of 514

21000 grms changed to 21.600

Except Nickel plated ~~tubes~~ rings on before packing + 250 Milligms Sulphate Copper in each cell -

Wt 5.547
Cal 272
T 48

529 Dup 528

Wt 5.382
Cal 272
T 48

530 Dup 528

Wt 5.276
Cal 272
T .48

531	5.443	272	48
32	5.440	271	4.8
33	5.484	272	4.8

	1	2	3	4	5	6
531	685	795	826	84.0	830	822
32	697	788	817	832	820	815
33	662	775	815	831	815	813

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
531	AFTER											
32	50											
33	HOT											

	167	168	169	170	171		222	223	224	225	226
531											
32											
33											

531 Duplicate 514
21600 grams absorbed to 21.688
Except in Each cell
250 milligrams Nitrate Bismuth, each cell
Cobalt plated tubes range on
before pkg

Wt 5,443
Cal 272
T 48

532 Dup 531

Wt 5,440
Cal 271
T 48

533 Dup 531

Wt 5,484
Cal 272
T 48

534	5.633	272	49
35	5.611	273	50
36	5.583	272	48

	1	2	3	4	5	6
534	630	763	821	842	832	825
35	582	733	792	812	802	792
36	640	790	835	850	837	828

~~Hot~~ Endurance

		57	58	59	60	61		112	113	114	115	116
534	AFTER											
35	50											
36	HOT											

		167	168	169	170	171		222	223	224	225	226
534												
35												
36												

534 Duplicate 514
21000 [illegible] to 21.673
Except Nickel plated
tubes rings on before pk7
.250 Mil [illegible] Nitrate B[illegible] with
in Each cell

Wt 5.633
Cal 272
T 49

535 Dup 534

Wt 5.611
Cal 273
T 50

536 Dup 534

Wt 5.583
Cal 272
T 48

537	5.682	272	48
38	5.674	272	48
39	5.336	272	49

	1	2	3	4	5	6						
537	680	772	822	838	825	816						
38	711	787	835	853	840	836						
39	666	735	780	788	795	775						

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
537	AFTER											
38	50											
39	HOT											

		167	168	169	170	171		222	223	224	225	226
537												
38												
39												

537 Duplicate of 514
21000 grain absorbed to 2,652
Except 250 milgrms Manganate of Potash — in each cell
Cobalt plated tubes rings on before ply

Wt 5.682
Cal 272
T 48

538 Dup. 537

Wt 5.674
Cal 272
T 48

539 Dup 537

Wt 5.336
Cal 272
T 49

540	5.694	.272	50
41	5.714	272	50
42	5.780	272	50

	1	2	3	4	5	6
540	695	817	863	895	877	875
41	627	832	881	906	892	888
42	661	825	880	910	892	900

Hot Endurance

		57	58	59	60	61		112	113	114	115
540	AFTER										
41	50										
42	HOT										

	167	168	169	170	171		222	223	224	225
540										
41										
42										

540 Duplicate of 514
21000 grams absorbed to 21758
Except Nickel plated Tubes
rings on before pasting
250 milligrams Manganate of Potash
in each cell

Wt 5.694
Cal 272
T 50

541 Dup 540

Wt 5.714
Cal 272
T 50

542 Dup 540

Wt 5.780
Cal 272
T 50

543	5.524	272	49
44	5.305	271	49
45	5.470	271	48

	1	2	3	4	5	6
543	512	692	757	772	742	750
544	575	700	737	750	710	745
45	622	762	787	803	812	821

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
543	AFTER	827	830	805	797	800						
44	50	782	790	770	773	767						
45	HOT	831	828	812	815	813						

		167	168	169	170	171		222	223	224	225	226
543												
44												
45												

543 Duplicate of 514
21,000 grams absorbed to 21,655
Except 250 milligrammes of
Lead Oxide dissolved in the 21%
KOH — in each cell
Cobalt plated tubes run green
before pkg

Lot 5.524
Cal 272
T 49

544 Dup 543

Lot 5.305
Cal 271
T 49

545 Dup 543

Lot 5.470
Cal 270 cracked one end
T 48

546	5.649	271	50
47	5.538	272	50
48	5.527	271	48

	1	2	3	4	5	6
546	577	795	850	877	835	855
47	582	796	842	866	825	850
48	95	S.C.	787	810	792	812

Hot Endurance

		57	58	59	60	61	112	113	114	115
546	AFTER	918	900	900	893	898				
47	50	900	895	887	880	886				
48	HOT	908	895	890	880	886				

	167	168	169	170	171	222	223	224	225	226
546										
47										
48										

546 Duplicate of 514
21000 grain absorbed to 21,708
Except nickel plated tubes
with rings on before pkg
250 milligrams Lead oxide dissolved in the
21% KOH in each cell

Wt 5.649
Cal 271
T 50

547 Dup of 546

Wt 5.538
Cal 272
T 50

548 Dup of 546

Wt 5.527
Cal 271
T 48

549	5.530	272	48
50	5.454	271	49
51	5.522	272	48

	1	2	3	4	5	6
549	585	803	867	850	817	227
50	633	800	842	855	792	212
51	632	815	866	885	812	227

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
549	After											
50	50											
51	Hot											

		167	168	169	170	171		221	222	[illegible]	[illegible]	[illegible]
549												
50												
61												

549 Duplicate of 514
2100 green absorbed To 21.68%
Except 100 milligrammes of Barium hydroxide & 100 milligrammes of Calcium hydroxide in Each cell — the 2 mixed together in the 21% —
Cobalt plated tubes rings on before pkg —

Wt 5.530
Cal 272
T 48

550 Dup of 549
Wt 5.454
Cal 271
T 49

551 Dup of 549
Wt 5.582
Cal 272
T 48

552	5,614	272	48
53	5.530	271	49
54	5.493	272	47

	1	2	3	4	5	6
552	717	890	917	930	857	892
53	730	865	882	892	822	862
54	690	827	860	875	830	846

Hot Endurance

		57	58	59	60	61		112	113	114	115
552	AFTER										
53	50										
54	HOT										

	167	168	169	170	171		222	223	224	225	226
552											
53											
54											

552 Duplicate of 514
21000 grain absorbed to 21,600
Except Nickel plated tubes
rings in before pkg
100 milg Barium hydroxide
100 " Calcium "
mixed together in each cell —

Wt 5.614
Cal 272
T 48

553 Dup of 552

Wt 5,530
Cal 271
T 48

554 Dup of 552

Wt 5.493
Cal 272
T 47

555	5.532	271	49
56	5.669	271	50
57	5.375	271	49

	1	2	3	4	5	6
555	688	825	840	858	797	801
56	676	826	845	862	827	835
57	713	818	820	837	790	796

Hot Endurance

		57	58	59	60	61		112	113	114	115	11
555	After	877	857	845	847	840						
56	50	882	871	867	850	845						
57	Hot	842	830	805	800	800						

	167	167	169	170	171		221	223	224	225	226
555											
56											
57											

555 Duplicate of 514
2100 grams absorbed to 2/720
Except 250 miligrms of recently precipitated antimony hydroxide — in each cell —
Cobalt plated ~~tubes~~ rings on before pkg —

Lot 5.532
Cal 271
T 49

556 Dup of 555 —

Lot 5.669
Cal 271
T 50

557 Dup of 555 —

Lot 5.375
Cal 271
T 49

558	5.743	272	49
59	5.750	271	48
60	5.753	270	48

	1	2	3	4	5	6					
559	623	831	865	886	850	868					
59	666	857	883	900	838	870					
60	606	827	873	892	850	862					

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
558	AFTER	902	880	890	881	877						
59	50	877	877	882	872	877						
60	HOT	932	921	907	900	896						

	167	168	169	170	171		222	223	224	225	226
558											
59											
60											

558 Duplicate of 514
21000 green absorbed to 21,630
Except Nickel plated Tubes
rings on before pkg
250 mlg recently precip'd Antimony hydrox.

Lot	5,743
Cal	272
T	49

559 Dup of 558

Lot	5,750
Cal	271
T	48

Ring [illegible]

560 Dup of 558

Lot	5,753
Cal	270
T	48

561	5.584	272	50
62	5.627	271	48
63	5.729	273	48

	1	2	3	4	5	6
561	632	821	857	890	826	832
62	650	830	867	890	837	855
63	718	885	905	930	866	882

Hot Endurance

		57	58	59	60	61		112	113	114	115	116
561	AFTER	905	895	888	877	885						
62	50	913	905	896	885	891						
63	HOT	920	920	917	912	912						

		167	168	169	170	171		222	223	224	225	226
561												
62												
63												

561 Duplicate of 514
2100 grams absorbed to 21.675
Except, ~~One [illegible]~~ 250 Milgrams ~~[illegible]~~
Chloride of Potassium in each
Cell, –
Cobalt plated Tubes rings as
before pkg

Wt 5.584
Cal 272
T 50

562 Dup of 561

Wt 5.627
Cal 271
T 48

563 Dup of 561

Wt 5.729
Cal 273
T 48

564	5.664	272	49
65	5.732	272	49
66	5.732	271	48

	1	2	3	4	5	6					
564	707	846	855	870	832	850					
65	687	855	868	891	848	867					
66	701	870	881	898	860	883					

Hot Endurance

		57	58	59	60	61		112	113	114	115
564	AFTER	885	885	885	875	878					
65	50	922	913	908	902	900					
66	HOT	935	917	917	902	900					

	167	168	169	170	171		222	223	224	225
564										
65										
66										

564 Duplicate 514

21000 grains about 650 to 21,650

Except Nickel plated tubes rings on before alloy

1250 milligrams Chloride of Potassium

Wt 5.664
Cal 272
T 48

565 Dup of 564

Wt 5.732
Cal 272
T 49

566 Dup of 564

Wt 5.732
Cal 271
T 48

5732
88
4,58.56

567	5.450	272	47
568	5.385	272	47
569	5.432	272	47

	1	2	3	4	5	6					
567											
68											
69											

Hot Endurance

		57	58	59	60	61		112	113	114	115	
567	AFTER											
68	.50											
69	HOT											

		167	168	169	170	171		222	223	224	225	226
567												
68												
69												

567 Duplicate of 514
21000 green absorbed to 21,600
Except 250 milligms Titanate of Potash
Cobalt plated ~~tubes~~ rings as before
pkg —

Wt 5.450
Cal 272
T 47

568 Dup of 567

Wt 5.385
Cal 272
T 47

569 Dup of 567

Wt 5.432
Cal 272
T 47

Makes 389 group
~~[illegible]~~

Hoffm o [illegible]
never read

~~Silicate Soda 250~~ Milligrammes each cell.
~~Aluminum 100~~
~~Copper Sulfate 250~~
~~Bismuth Nitrate 250~~
Hg. made sol in KOH,
~~Manganate Potash~~
~~Lead oxide dissolved in KOH, 250~~
~~Tin Chloride~~
~~Barium hydrate~~ } 250
~~Lime " "~~
~~Sulphate Lime 250~~
Carbonate Lime 250
~~Aluminum chloride 250~~
~~Chloride Sodium · Chl Potash 250~~
Titanate Potash 250
~~Chromates~~ Gelatin 100 -
Cellulose 250
Stearic acid 250 -